This is another contribution by Van Gehuchten to the study of the central termination in the nuclei of the posterior columns of the peripheral sensory nerves. The study of the degenerated tracts up to the nuclei show that they occupy a position slightly anterior and just external to the column of Goll.

4. *Prolongations of Nerve Cells in Cord of Higher Vertebrates.*—The Golgi methods show in adult rabbit cords three types of cells: (1) Bipolar cells with two dendrites at one pole and one from the opposite pole. Irregular varicosities are typical of both dendrites. Gemmules are also present at long intervals and are few in number. (2) Fusiform cells with many dendrites which are literally covered by gemmules. (3) Cells with four dendrites, occupying the white matter. These are extremely irregular in general contour.

In the anterior horns the dendrites fall into three general classes. (1) Some are of uniform caliber; (2) others, more numerous, have moniliform swellings, and (3) moniliform dendrites. The nerve cells of the cord differ markedly in the matter of prolongations from those in the cortex. They are more often varicosely swollen. The gemmules are fewer and vary more widely in shape and size. The authors describe in the cord a unique type of offshoots intermediate between the gemmules and protoplasmic processes.

5. *Lesion of the Cauda Equina.*—(Continued article.) JELLIFFE.

IL MANICOMIO

(Vol. 18, 1902, No. 1.)

1. Some Notes on Pathological Anatomy in the Insane.—G. ANGIOLELLA.
2. The Basic Unity of Psychopathic Processes.—F. DEL GRECO.
3. Oscillations of the Metabolic Processes in the Epileptic.—N. ALESSI AND A. PIERRI.

1. *The Pathological Anatomy of the Insane.*—The most prevalent lesion of the brain, corresponding to the frequency of general paralysis, is chronic fibrous leptomeningitis, associated with periencephalitis, the latter being characteristic of general paralysis of the insane. In 450 autopsies, this lesion was found in 108, namely in 94 men and 16 women. Among the various other lesions associated with the leptomeningitis, the author found meningeal hemorrhage, edema of the brain, softening of certain portions of same, also endarteritis deformans, insufficiency of the aorta, a large proportion of chronic nephritis, and most of all, omitting many other affections, lobular bronchopneumonia, namely, 46 cases. The author calls special attention not only to the multiplicity of the associated lesions, but also to the variety of their combinations, the former circumstance going to prove the author's contention that paralysis of the insane is a general disease, affecting not only the nervous system, but the whole organism through the vascular apparatus, which latter, surcharged with "toxic" blood, undergoes changes such as chronic inflammation; this in its turn causing alterations in various organs, and parenchymas of same; these therefore suffer in their nutrition, degenerate, become inflamed or undergo necrosis. As regards the variety of lesions it may possibly be explained by a particular susceptibility of certain organs in some individuals to alterations produced in the blood of the patients.

It is worthy of note that only in one case were there encountered syphilitic lesions, namely gummatous cicatrices of the liver; it must, however, be stated that in general it is rather difficult to discover at the autopsies of paralytics clear and indubitable traces of syphilis. For those cases in which the etiological factor of syphilis, alcohol or other poisons can be excluded, the author finds the causation of the affection in overwork, exhaustion (what the Frenchmen very appropriately designate as *surménage*), which may be supposed to bring about the appearance of abnormal chemical products or an insufficient elimination of the normal metabolic processes, thus producing intoxication of the blood with the resulting vascular and parenchymatous lesions. It is claimed by many investigators that syphilis and alcohol are not sufficient by themselves to cause general paralysis, while the association of overwork or nervous exhaustion with these poisons frequently results in bringing about this condition.

Next in frequency the author finds hyperemia of the meninges and of the brain substance, largely of the cortex, as encountered in 66 cases; 52 men and 14 women. In six of these cases the hyperemia was the essential morbid condition producing clinically the picture of acute delirium. Another group of cases showed chronic or transitory mania. In these there was also found hyperemia in other viscera, in the kidneys, lungs, gastro-intestinal tract, spleen, *etc.*, showing that the intoxication was general. Still another category included cases in which the cerebral hyperemia existed only as a local manifestation of an infectious disease in other organs; others again were epileptics who died during an epileptic attack; some suffered from cardiac affections, general debility, *etc.* Cerebral anemia was met with in but a few cases, in connection with general anemia and chronic exhausting affections, preëminently tuberculosis of the lungs and other organs.

Senile atrophy of the brain was seen in 11 cases, 5 men and 6 women, in connection with diffuse atheromatosis, external hydrocephalus, pulmonary and cerebral edema, cardiac hypertrophy, *etc.* It is, however, difficult to state positively where physiological senile involution ends and where the pathological process begins, although clinically the difference does exist, and deviations from physiological senile involution can be detected in life and classified similarly to what may be observed in the insanities of puberty and menopause.

The author calls special attention to a very interesting fact, namely, the comparative rarity of focal affections of the brain in mental diseases; thus he records only six cases of cerebral hemorrhage (conected, however, with acute leptomeningitis, bronchopneumonia, *etc.*), and 6 cases of softening of the brain; in a simple epileptic, in a deaf-mute epileptic idiot, in a seventy-two year old woman with senile melancholia, softening of the corpus striatum and internal capsule in dementia, in an indefinite case of epilepsy (?) and in one of senile hypochondriasis. Then there were 2 cases with abscess of the brain, 3 cases of glioma, one case of ecchinococcus (10 cysts of various sizes), accompanied by diffuse acute leptomeningitis; also one case of syphilitic gumma (Jacksonian epilepsy), and one sarcoma of the meninges. The author is inclined to attach comparatively little importance to focal lesions: hemorrhages, neoplasms, softening, suppuration, in the production of mental affections. Of the accidental diseases he found acute catarrhal pneumonia (102 cases), pulmonary tuberculosis (71 cases), croupous pneumonia (42 cases), pleurisy (29 cases), endocarditis (40 cases), hepatitis, pericarditis, chronic intestinal catarrh, peritonitis, chronic nephritis (75 cases), *etc.* Some of these affections are not to be considered as simply accidental in the course of the mental malady, others may be so considered; to the first group belong first of all affections of the kidneys (75 nephrites in 450 autopsies), then aortitis and endarteritis, and others. The second group of cases simply shows how readily the poor insane with his abnormal or debilitated nervous system becomes peculiarly vulnerable and falls an easy prey to various infectious agencies, the most pernicious of which is tuberculosis, in all its forms; then the various pulmonites, pleurisy and pulmonary gangrene. On the other hand it is well known with what rapidity epidemic diseases spread in asylums.

As regards the relation between infection and insanity, it is worthv of note that some insane present a truly remarkable resistance to certain chronic intoxications, and especially to tuberculosis. There are observed cases in which the tuberculous process remains stationary for years and years, and the patient, after a prolonged confinement in bed, debilitated, exhausted, emaciated and profoundly anemic, dies eventually of slow marasmus. This is one of the facts we are unable to explain in the insane.

2. *The Basic Unity of Psychopathic Processes.*—A lengthy psychological sketch on insanity and degeneration which does not lend itself to abstraction.

3. *Oscillations in the Metabolic Processes of the Epileptic.*—It has long been observed that the epileptics present very frequently facial asymmetry (Laseque), strabismus and inequality of the pupils (Bianchi), also asymmetry in the coloring of the iris (Féré), as well as astigmatism. Tonnius finds left-handedness more frequently among epileptics than among insane. Zucarrelli noted asymmetry in the sides of the thorax. Other abnormalities relate to the length of the fingers, lack of visual acuity, impaired hearing, inequality in the tendon-reflexes, *etc.* This asymmetry in the epileptic is also manifested in his motor and psychic activity; and even though his mentality is frequently precocious, it is usually one-sided, and deficient ethically. Féré defines the character of the epileptic as "*mobil et explosif.*" The author of the present investigation, desirous of verifying whether this morphological and functional disharmony finds a corresponding expression in the metabolic activity of the epileptic, examined for some time the urines of epileptics every day. The subjects were 7 epileptics who presented special variations in their deportment; the examinations extended to between 27 to 37 days. Their food was the ordinary hospital regimen. The patients were free from any visceral affection, and they were given no drugs. The principal examination was directed to urea and especially to phosphoric acid, which is considered as a true index of the activity of the central nervous system. The general considerations drawn are as follows: The quantity of urine at all times was rather scarce, presenting in some cases notable oscillations, especially in four patients who were typical epileptic subjects, irascible, morose, frequently menacing and impulsive. Nor is there noted any special diminution in the quantity of the urine on the days when the patients had epileptic attacks. The specific gravity, always rather high, was generally in inverse proportion to the amount of the urine. Here were observed frequent oscillations corresponding with the curve of phosphoric acid. The reaction of the urine was almost always acid. Neither peptone nor sugar was ever found in any of the urines, and hardly a trace of albumin, in one case. The amount of urea was generally low; whatever oscillations were observed were always in correspondence with the phosphoric acid curve. As regards this latter, the author states that the amount of it was usually rather small, and only sometimes increased to some extent. The variations in the amount of phosphoric acid were very considerable and almost always in correspondence with the excretion of urea. Although not positively so it may be stated in a general way that there was a certain constant relation between the variations in the amount of phosphoric acid, and the epileptic seizures. A close examination of the subjoined tables of minute observations of the cases brings out the fact that rapid and very considerable oscillations are found not only at the intervals, but also on the days when no attacks occur. This the author thinks is due to the fact that alongside with the above mentioned somatic and functional abnormalities there is in the epileptic a certain daily instability of metabolic activity as evidenced by the curves in the various constituents of the urine. This has been seen even in those patients in whom the attacks occur at long intervals. The author contends that the lack of equilibrium in the organo-

genetic forces of the epileptic as manifested by the various asymmetries and by the great variability of the organic and psychic functions stands in direct relation to a certain oscillating condition of the chemical productivity of the various tissues of the body, as especially manifested by the connection between the amount and specific gravity of the urine, and the excretion of urea and phosphoric acid. The erudite author devotes considerable space to the discussion of the present state of the phosphoric acid problem in its relation especially to the activity of the central nervous system.

(Vol. 18, 1902, No. 2.)

1. The So-Called Polyneuritic Psychosis.—G. Esposito.
2. Imbecility and Asexualism.—G. Angiolella.
3. The Suicidal Tendency and Suicide in the Insane.—R. Gucci.

1. *Polyneuritic Psychosis.*—It was Korsakoff of Moscow who first called attention to this psychosis, some time in 1887, since which time the disease has been known under his name. He was the first to prove its existence by the aid of 14 classical observations in which alcohol was absolutely excluded as an etiological factor of the polyneuritis, and instead were found sepsis (puerperal), typhoid, tuberculosis, *etc.* The condition of polyneuritic psychosis is characterized by symptoms of multiple neuritis associated with psychic disturbances such as amnesia, alteration of ideation, with the predominance in some cases of symptoms of irritability and excitement, consciousness being either entirely preserved or somewhat obtunded. All the symptoms may be of variable intensity. The patient retains no hold in his memory over recent events, while he may remember well past occurrences. Outside of the psychic state we find gradual emaciation, loss of strength, weakening of cardiac activity, certain changes in the urine, *etc.* However, it does not seem that all the neurologists coincide as yet with Korsakoff in accepting this clinical picture as a pathological, well-defined entity, and Jolly proposes to designate it as Korsakoff's syndrome. As this psychosis presents a certain similarity with confusional insanity, some authors are inclined to consider it as but one variety of this last, and indeed the points of contrast between these two affections are many—in the etiology, symptomatology, and pathological anatomy. The author presents two cases, one of an alcoholic, the other with a more or less definite history of syphilis and malaria, and rather moderate alcoholism. Both cases presented distinct symptom-complexes of acute confusional insanity. The author devotes considerable space to the psychological and anatomo-pathological considerations of amnesia, especially as met with in the so-called polyneuritic psychosis, and some consideration is given to the obscure and controversial problem of memory. One important fact may be established without any doubt, namely: that the disturbance of memory is a symptom common to all the pathological processes due to toxemia of the central nervous system, and that the variations in this disturbance stand, in some cases, in direct relation to the particular pathogenic agent, as well as to the special individual idiosyncrasy. The amnesia of the polyneuritic psychosis lacks any pathogenic character, and therefore the psychosis as a consequence bears no peculiar individual imprint of its own. In fact no diagnosis of any malady should be based on one or two symptoms, especially when neither the one nor the other is in any way pathognomonic. It is well to remember Nissl's advice as to arriving at a diagnosis of a mental affection: the diagnosis is to be drawn not only from the syndrome of symptoms as they appear but from a full and thorough examination of all the elements which go to make up the characteristic features of the disease, and from the antecedent history of the individual. The author thinks that the disease under discussion is but a part of the

great picture of confusional insanity, as had been asserted by Kræpelin, and cannot be considered as an affection *sui generis* among the infectious insanities.

2. *Imbecility and Asexualism.*—This is a clinical sketch based on the history of a youth, eighteen years of age, of a markedly tainted origin (mother "weak-minded," father stammerer, and derelict in his paternal duties to his offspring). The patient when grown old enough showed neither willingness nor capacity for work; was always weak-minded, and confined on this account several times during variable periods in the asylum. The physical measurements, especially of the head, showed certain abnormalities; he also has slight gynecomastia, flat larynx, fat abdomen, protruding buttocks, and a marked dorso-lumbar curvature. There is a complete absence of testicles, the scrotum hardly visible as a slight tumefaction, soft and delicate, of the skin; instead of the penis, a simple cutaneous appendix with a canal for the urethra, without any distinct features of body or glands, and no trace of any corpus cavernosum. Psychically the patient presents undoubted infantilism, and is much inferior in his mentality to his age, his behavior being that of a boy of a few years old. He demonstrates no affection either for any member of his family or his comrades in the institution. He lacks completely all the sexual instincts and sentiments, in fact he shows a certain degree of aversion toward women, although he seems to understand the difference between himself and the normal male. The question that interests one the most is whether the physical condition of the patient is simply coincident with his mental inferiority, or whether there is a certain connection between the two. It is a well known anatomical fact that atrophy of a certain region of the nervous system, and especially in the cortical zone, is not without influence on the development of the rest of the organism. Now, if a certain portion of the cortex is lacking, all the fibers which originate or gather there will either be absent or atrophy, thus inducing certain alterations in the various regions with which these fibers connect. May the absence or at least atrophy, in the case under discussion, of certain centers and of nervous paths leading to the sexual organs and functions be considered as the cause of deficient mental development? Can we establish a relation between the genital centers, wherever they be located, and the process of mental development, similar say to that between the center of speech and the higher special centers? The following facts seem to answer these questions more or less completely. The rapid increase in potentiality, in intellectual energy accompanied by marked changes in the character is accompanied in both sexes by the establishment of secretion in the genital organs, by secondary sexual characteristics, the appearance of hairy growth over the pubic region, the increase in size of the larynx in man, and the mammary glands in the woman, etc. It is at this age that the imagintion faintly awakens, and the sexual function which is the basis of the most elementary social organism, the family, causes the appearance in the individual of the sentiments of paternity, filial love, *etc.* In the same manner must we expect to find a decadence of the mental faculties, and a change of character in case the sexual functions be extinguished; it is the involution, as it were, of the whole organism which gives rise to such psychic deficiency.

3. *Suicide Among the Insane.*—The problem of suicide in general in its sociological aspect, and of suicidal tendencies among the insane in particular is one which has attracted the attention of alienists for a long time past. Thus Esquirol, Pinel, Marcé, Dagonet, Bucknell and Tuke, Maudsley, Kræpelin and others have all occupied themselves with this most important question, each of them offering his views on the solution of this problem. Latterly the Italian investigators, as Morselli (in his work

"Il Suicidio"), L'Antonini and others, contributed some very valuable information on the subject. The author's study is based on the observation of 132 inmates of an asylum who have shown positive tendencies toward suicide (out of a total of 405). The greatest number, namely, 29, is found among melancholics; then follow those affected with dementia præcox, epileptic insanity, mania, paranoia, and so on down the list. Among those with precocious insanity, the tendency has been observed only during the periods of depression. But of course, it is the real melancholics that present the most classical form of an obstinate tendency to suicide; in them it is continuous, invincible, not to be easily overcome. In them it may even be observed in status raptus. As regards the epileptics there is a greater danger in their impulsiveness as regards the destruction of those around them; but the period following the epileptic "explosion" is marked by such a degree of depression that the patient falls a ready prey to the suicidal tendency; to this must be added the various hallucinations that follow after the attack and that may bring about an irresistible impulse toward suicide, which they frequently commit in the most unexpected and unlooked-for manner. The alcoholic is subject to suicide during grave mental depression associated with various hallucinations. The statistics gathered by the author, covering a period of some sixty years, show that there were but 22 suicides in the asylum (at Florence), a really small number if we take into account that the yearly number of suicides in Italy alone is more than 2,000, and that the asylums shelter insane with irresistible suicidal tendencies; in fact hardly one per cent. of those admitted destroy, or rather succeed in destroying themselves. The author brings forward certain statistics as regards the sexes of these suicides, their ages, their means for the completion of the attempt, the season of the year, and the places where these successful attempts were accomplished—statistics which, we must confess, are hardly of much scientific value, as they are based upon a comparatively meager number of subjects and thus admit of no generalization, the chief value of statistical investigations as regards practical application. Still it must be recognized as a sad fact that suicides do occur in the insane asylums among those patients who are addicted to suicidal tendencies, and such inmates require special care and rigid surveillance on the part of the attendants to frustrate their attempts at self-destruction. ALEX. ROVINSKY (New York).

MISCELLANY

THE CRIMINAL EQUIVALENT OF INSANITY. Wm. B. Noyes. Medical News, October 11, 1902.

This paper, discussing the obscure problem of so-called moral insanity, presents two cases. The first is the common type of "bad" or "incorrigible" boy, unfortunately a son of wealthy parents, in whose case the association of some mental backwardness and fits of ungovernable temper with numerous moral defects, indicates the presence of a psychosis presenting chiefly moral symptoms. The second case indicates the possible substitution of immoral or criminal tendencies for the common symptoms associated with a mental breakdown. In this case a short attack of acute insanity changed a boy of fairly decent tendencies into a professional crook. The indefiniteness of the legal attitude toward such a case is shown by the fact that he was first sent to Matteawan Asylum for insane prisoners, and later for the same offense to state's prison. A careful analysis of the history of law relating to such cases of partial insanity, shows decided variation of methods and by different states, especially marked in their use of such expressions as "impulsive insanity" and criminal responsibility. A psychological treatment of the subject attempts to analyze defects of the will and reasoning powers. The